

## CLAIMS

What is claimed is:

1. A turbine engine comprising:
  - a case having an axis;
  - a compressor;
  - a turbine; and
  - a combustor comprising:
    - a fuel source;
    - a circumferential array of combustion chamber conduits, the conduits being downstream of the compressor and upstream of the turbine; and
    - a manifold positioned to direct a mixture of air from the compressor and fuel from the fuel source to the array, the array supported for continuous rotation relative to the case in a first direction about the axis to cyclically bring each conduit from a charging zone for receiving a charge of said mixture from upstream to a discharging zone for downstream discharging of products of combustion of said charge, a flow path extending between a downstream portion of the manifold and an upstream portion of the array the flow path being locally bounded by first surface portions of the manifold and array and where the first surface portions have a first relative radial alignment when the array is rotating at a first speed and a second radial alignment, closer than the first radial alignment, when the array is rotating at a second speed, greater than the first speed.
2. The engine of claim 1 further comprising:
  - at least one of a first seal inboard of the flow path and a second seal outboard of the flow path for sealing between the manifold and array.
3. The engine of claim 2 having both said first and second seals and wherein:
  - said first and second seals are annular frustoconical labyrinth seals.
4. The engine of claim 1 wherein:
  - said first and second seals each have teeth on the array and a mating rub strip on the manifold, the rub strip being abradable relative to a remaining portion of the manifold; and
  - for each of the first and second seals, the teeth and rub strip are in closer proximity when the array is rotating at a second speed than at the first speed.

5. The engine of claim 1 wherein:

the first surfaces of the manifold and array each include an inboard portion and an outboard portion at least over a streamwise span convergent toward a junction between the manifold and array.

6. A turbofan engine comprising:

a fan;

a compressor;

a turbine coaxial with the compressor along an axis;

a pulsed combustion combustor receiving air from the compressor and outputting combustion gasses to the turbine and having:

a plurality of combustion chamber conduits held for rotation about the axis through a plurality of positions, including:

at least one charge receiving position for receiving a charge from upstream;

at least one initiation position for initiating combustion of the charge;

and

at least one discharge position for downstream discharging of products of combustion of said charge; and

means for directing the charge to the conduits in the at least one charge receiving position and comprising:

a first portion;

a second portion, downstream of the first portion and positioned to rotate with the conduits during said rotation, at least one of the first and second portions including means for controlling leakage of the charge through one or more gaps between the first and second portions via a venturi effect.

7. The engine of claim 6 wherein:

the means for controlling comprises inboard and outboard surfaces of both the means for directing and a leading annular element joining the combustion chamber conduits convergent toward a junction between the means for directing and the leading annular element.

8. A pulsed combustion device comprising:
  - a support structure;
  - a combustor carousel supported by the support structure and rotating relative thereto about an axis and comprising:
    - a plurality of combustion conduits in a circumferential array, each cyclically receiving a charge and discharging combustion products of the charge; and
    - a nonrotating manifold portion having:
      - at least a first sector conveying air to an aligned transient first group of the combustion conduits; and
      - at least a second sector blocking upstream ends of an aligned transient second group of the combustion conduits from upstream communication, first surface portions of the array and manifold providing a venturi effect at a junction between the array and manifold to limit leakage of the charge through the junction.
9. The device of claim 8 wherein combustion of the charge comprises detonation.
10. The device of claim 8 being a turbine engine comprising:
  - a compressor upstream of the carousel; and
  - a turbine downstream of the carousel.